



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,908	11/28/2002	Heng-Kuan Lee	FTCP0014USA	5309

27765 7590 11/04/2004

NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER

HANEY, MATTHEW J

ART UNIT	PAPER NUMBER
----------	--------------

2613

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,908

Applicant(s)

LEE, HENG-KUAN

Examiner

Matthew Haney

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-11 and 16 is/are rejected.
- 7) ☒ Claim(s) 3-8 and 12-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because Figure 4 is unreadable and needs to be resubmitted in better quality. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Allowable Subject Matter

2. Claims 3-8, and 12-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 10-11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linzer (US 6,229,850).

As for claims 1, 10, and 16, Linzer teaches of selecting a plurality of search

Art Unit: 2613

locations within a search window (Note: the reference takes the image (frame) and makes reduced resolution images (i.e. search locations) and performs searches in each one of said reduced resolution images, Column 7, Lines 7-31); generating a match-value (i.e. search results) for each search location indication how closely each search location matches a reference block (Note: Column 6, Lines 27-32); generating a plurality of level-values based on first dispositional relationships of the search locations and the relative magnitudes of the match-values (Note: the level-values are noted in the reference as "reduced search locations" which are dependent on the previous process of the first video compressor, Column 7, Lines 18-47); generating a preliminary motion vector based on the level-values (Column 6, Lines 52-56); generating a plurality of candidate results based on second dispositional relationships of the search locations and the relative magnitudes of the match-values (Note: the third search uses the results of the first and second searches which used search results and reduced search locations, Column 6, Lines 44-60). Linzer does not explicitly teach of generating a final motion vector by altering the preliminary motion vector according to the candidate results as indicated by a predetermined set of formulas, however, Linzer teaches that the final motion vectors made in the third search results for the first video compressor which contains common hardware between the first and second video compressor (i.e. dct) which contain a predetermined set of equations (Column 6, Lines 50-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a set of formulas instead of equations because of the instance in which it was used. The equations are used in situations where the same calculation is done every time (i.e. the

Art Unit: 2613

same transform is performed no matter what the variables are), however, when the variables need to change depending on different levels or other circumstances then formulas must be used, and this would have been known to one of ordinary skill in the art.

As for claims 2 and 11, Linzer does not explicitly teach of the search locations are selected according to a predetermined table comprising a first column, a second column, and a plurality of rows, each row in the table specifying a unique search location, however, Linzer does teach of storing the information in memory or in storage devices (Column6, Lines 1-21). It would have been obvious to one of ordinary skill in the art at the time of the invention to store the information in a table instead of memory in order to make the retrieval of said information quicker and more precise.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linzer (US 6,229,850) in view of Kim (Kim, J.N. et al., A Fast Motion Estimation for Software Based Real-Time Video Coding, May 1999, IEEE Transactions on Consumer Electronics, Vol.45 No 2, Pages 417-425.).

As for claim 9, Linzer does not explicitly teach of generating the match-values comprises calculating the sum of the absolute differences in brightness between each pixel in the reference block and a corresponding pixel in the search location to generate the match-value for the search location, however, Kim does (Column 2, Lines 3-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the sum of absolute differences because of its wide use in the art and also its effectiveness at being computationally fast. (Official Notice)

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Haney whose telephone number is 703-305-4915. The examiner can normally be reached on M-Th (7-4:30), Every Other Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew Haney
Examiner
Art Unit 2613

mjh


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600